

intermittently. The language cited at column 3, lines 17-23 provides that the bonding between these two tubular members need not be continuous over this region, see in particular column 3, lines 17-18. The proximal most joint between the two tubular members 32 and 33 is a butt joint, joining edges of the two tubular members. The language cited at column 7, line 59 through column 8, lines 16 describes how some of the above described bonding may take place, particularly towards the distal end of the tubular members. Neither the specification nor the drawings in Sirhan et al. disclose a bond between the outside wall surfaces of two tubes of different materials.

Applicants respectfully submit that Sirhan et al. does not anticipate the claimed invention since Sirhan et al. does not disclose the bonding region of the claimed invention and therefore independent claim 49 is in condition for allowance. As claims 50-74 depend from claim 49, applicants submit that these claims are also in condition for allowance.

35 U.S.C. §103 Rejections

Claims 56, 67, 69 and 73 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirhan et al. in view of Fontirroche et al. (U.S. Patent No. 5,538,510).

Claims 57, 66, 68, 70 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirhan et al. in view of Fontirroche et al. as applied to claims 56, 67, 69 and 73 above, and further in view of Berg et al. (U.S. Patent No. 5,792,116).

Claim 58 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirhan et al. in view of Javier, Jr. et al. (U.S. Patent No. 6,093,177).

Claims 59, 65, and 71 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirhan et al. in view of Javier, Jr. et al. as applied to claim 58 above and further in view of Fontirroche et al.

Claims 60 and 72 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sirhan et al. in view of Javier, Jr. et al., further in view of Fontirroche et al. as applied to claim 59, and further in view of Berg et al.

Applicants respectfully traverse these rejections. Sirhan et al and the other cited prior art do not teach or suggest the claimed invention. Specifically, the prior art does not teach or suggest the bonding region of the claimed invention.

Independent claims 49 recites a catheter shaft having a bonding region between the outside wall surfaces of two tubes of different materials. This bonding region provides a larger surface area for bonding between the two tubes as well as enhanced ease of radial positioning of the tube walls with respect to each other.

Butt joints, such as that at the proximal edge of tubular member 33 to the orifice in tubular member 32 in Figure 16 of Sirhan et al. are limited in the bonding area by the thickness of the tubular members. The butt joint also has no built in mechanism to assure proper relative positioning of the edges to be bonded, and as such the already limited bonding region may be further reduced by manufacturing variances.

Since the bonding region of the overlapping joint of the claimed invention is not limited by the thickness of the tube walls, a larger bonding area resulting in a stronger bond is possible. The overlapping joint of the claimed invention also has inherent mechanical features to assure proper relative radial positioning of the tube walls. Simply put, one tube wall will naturally contact and push against the other when the tube walls are in the proper relative radial position. This assures a greater amount of the enhanced bonding area of the joint will be effectively utilized.

As claims 56-60 and 65-73 contain this limitation of the bonding region which the prior

art does not teach or suggest, as well as additional limitations, applicants submit that these remarks overcome the 35 U.S.C. §103 rejections and that these claims are ready for allowance.

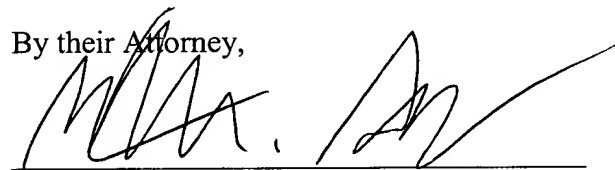
Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned “Version with markings to show changes made.”

Reexamination and reconsideration are respectfully requested. It is respectfully submitted that the claims are now in condition for allowance, issuance of a Notice of Allowance in due course is requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

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By their Attorney,



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Version with Markings to Show Changes Made

In the Claims:

Claim 49 has been amended as follows:

49. (Once Amended) A catheter shaft comprising:

a first tube including an inflation lumen in fluid contact with a dilation balloon, an inside wall surface, and an outside wall surface, said first tube having an orifice in a [proximal] portion of said first tube;

a second tube inserted through, and extending distally from, said orifice inside said inflation lumen, said second tube having a length, a lumen therethrough, a proximal portion, an inside wall surface and an outside wall surface; and

a bonding region wherein said second tube outside wall surface is bonded to said first tube outside wall surface by re-flow of the first and second tube outside wall surfaces, said second tube inside wall surface being formed of a second, lubricious material for a majority of said second tube length, said first tube wall having a layer of a first, flexible material extending for a majority of said first tube length, said first material being different from said second material.